

In re application of : BOX PATENT APPLICATIONS
Quentin DEBUISSCHERT et al. : Group Art Unit: Unassigned
Serial No.: Unassigned : Examiner: Unassigned
Filed: March 29, 2001 :

For: PROCESS OF DESULPHURIZING GASOLINE COMPRISING
DESULPHURIZATION OF THE HEAVY AND INTERMEDIATE FRACTIONS
RESULTING FROM FRACTIONATION INTO AT LEAST THREE CUTS

PRELIMINARY AMENDMENT

Assistant Commissioner for Patents
Washington, D.C. 20231

SIR:

Prior to examination of the above-identified application, please amend the application as follows:

IN THE CLAIMS

Please amend the claims as follows:

Please cancel claims 1-10 without prejudice or disclaimer.

Please add the following claims:

-- 11. A process of producing gasoline with a low sulphur content from a gasoline feedstock containing sulphur, light sulphur compounds saturated and unsaturated sulphur compounds, diolefins, olefins, aromatics, nitrogen and acetylenic compounds, said process comprising at least the following steps:

- (a1) conducting at least one selective hydrogenation of the diolefins and acetylenic compounds contained in the feedstock,
- (b) conducting at least one separation of effluent obtained at the end of step a1 into at least three fractions: a light fraction containing light olefins, and from which substantially all of the sulphur has been removed, a heavy fraction in which most of

the sulphur compounds initially contained in the gasoline feedstock is concentrated, and at least one intermediate fraction having a depleted content of olefins and aromatics,

(c1) conducting at least one treatment of the heavy fraction separated at step (b) on a catalyst enabling the unsaturated sulphur compounds to be at least partially decomposed or hydrogenated, and

(d) conducting at least one step to remove the sulphur and nitrogen from at least one intermediate fraction.

12. A process as claimed in claim 11, further comprising at least one step (a2) prior to step (b) of increasing the molecular weight of light sulphur compounds present in at least one of the feedstock and the effluent from step (a1).

13. A process as claimed in claim 11, further comprising a step (c2) of treating effluent from step (c1) on a catalyst so as to decompose the sulphur compounds.

14. A process as claimed in claim 13, in which the hydrogenation of olefins in said effluent is limited to less than 20% by volume.

15. A process as claimed in claim 11, further comprising a step (e) of mixing at least two of said fractions, at least one of which was desulphurized at step (c1) and optionally (c2) and/or step (d).

16. A process as claimed in claim 11, in which a part of at least one intermediate fraction obtained from step (b) is mixed with the heavy fraction from step (b) prior to step (c1).

17. A process as claimed in claim 11, in which a part of at least one intermediate fraction obtained at step (b) is mixed with effluent from step (c1).

18. A process as claimed in claim 11, in which step (d) during which the sulphur and nitrogen are removed, further comprises hydrogenation of the olefins.

19. A process as claimed in claim 11, in which the feedstock is a gasoline cut from a catalytic cracking unit.

20. A process as claimed in claim 13, in which step (b) comprises separating effluent obtained from step (a1) into four fractions: a light fraction, a heavy fraction and two intermediate fractions, treating one of the intermediate fractions at step (d), and mixing the other intermediate fraction with the heavy fraction separated at step (b) before said heavy fraction is treated in step (c1) and/or step (c2).


21. A process according to claim 11, further comprising subjecting effluent from at least step (d) to catalytic reforming. --

REMARKS

Original claims 1-10 are replaced by claims 11-20 which do not contain multiple dependency and are otherwise editorially improved over the original claims. Consequently, Applicants facilitate examination and avoid the extra cost for the original multiply dependent claims of which claims 15-20 were improper multiply dependent claims. In any case, Applicants reserve the right to reintroduce claims to canceled combined subject matter.

New claim 21 is based on the specification.

Respectfully Submitted,



I. William Millen (Reg. No. 19,544)
Attorney for Applicant(s)

MILLEN, WHITE, ZELANO & BRANIGAN, P.C.
Arlington Courthouse Plaza I
2200 Clarendon Boulevard, Suite 1400
Arlington, VA 22201
(703) 812-5325
Internet Address: millen@mwzb.com

Filed: March 29, 2001